



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/063,798

05/14/2002

Mohamed El-Demerdash

Gems0178/YOD

2716

28046 7590 04/30/2007
FLETCHER, YODER & VAN SOMEREN
P. O. BOX 692289
HOUSTON, TX 77269-2289

EXAMINER

SCHEIBEL, ROBERT C

ART UNIT

PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/063,798

Applicant(s)

EL-DEMERDASH ET AL.

Examiner

Robert C. Scheibel

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,10-23,25-53,56-71 and 85-88 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 10-23, 25-53, 56-71, and 85-88 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

- Examiner acknowledges receipt of Amendment filed 2/6/2007.
- Claims 1, 21, 36, 53, and 56 are currently amended.
- Claims 6-9 and 54-55 have been cancelled.
- New claims 85-88 have been added.
- Claims 1-3, 5, 10-23, 25-53, 56-71, and 85-88 are currently pending.

Response to Arguments

1. Applicant's arguments, see pages 14-22, filed 2/6/2007, with respect to the rejection of claims 1-3, 5-23, and 25-71 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

In the section titled "Legal Precedent" on pages 14-15, Applicant cites case law related to obviousness rejections.

In the next section titled "Improper Combination – References Teach Away From One Another" on pages 16-17, Applicant argues that the Heiserholt and Opoczynski references teach away from one another. Specifically, Applicant indicates that the combination of these two references would result in a disabled system. Examiner respectfully disagrees. Applicant cites portions of Heiserholt indicating that the components must be connected in series to allow communication between two neighboring slave nodes. However, these cited portions refer to the optical portion of the "bus". The electrical portion of the bus is a CAN bus and behaves much like the bus in the present application. Further, Applicant focuses on one particular behavior kill signals, as applied to the optical portion of the "bus". However, Examiner also indicated using

Art Unit: 2616

the request lines of Opoczynski which pass information regarding system faults via a “dedicated connection” very similar to the safety loopback link of the present application. There would be no adverse impact to the modification of Heiserholt to add a similar loopback link as disclosed in Opoczynski. Further, this modification would clearly provide a benefit to the system in making the system more tolerant of faults.

In the section titled “Claim Features Omitted from Cited References” on pages 17-20, Applicant argues that the references do not teach the features of the safety loopback link. Specifically, Applicant cites portions of the present specification and then alleges that Opoczynski does not disclose these limitations. However, these limitations are not claimed. Examiner contends that Opoczynski discloses the claimed limitations of the safety loopback link. Specifically, the request lines of Opoczynski are independent of the dual-conductor linkage and also clearly communicates signals separately from the signals communicated on the dual conductor linkage. See the description on lines 35-54 of column 2 of Opoczynski, for example.

In the section titled “Improper Combination – Lack of Objective Evidence of Reasons to Combine”, Applicant argues that the Examiner failed to provide objective evidence of the motivation for combining the references. Examiner respectfully disagrees. As stated in the previous office action, Opoczynski discloses this motivation to combine (for transporting important control signals) in column 2. Consider the passage from line 66 of column 2 through line 3 of column 3 which indicates that this separate dedicated line (the loopback) provides a “higher level of robustness” than if these signals were carried on the bus itself.

In the section titled “Request Evidence to Support Official Notice”, Applicant requests that the Examiner provide evidence in support of alleged use of Official Notice. However,

Art Unit: 2616

Examiner did not take Official Notice. The rejection indicated that the use of a safety loopback communications link is well known in the art. However, Opoczynski was provided as a reference disclosing this well-known teaching.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **1, 2-3, 10, 21-23, 36-41, 43, 53, and 85-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski*.

As to claim 1, see e.g., figure 2 of Heiserholt where a master node is taught as CAN master 42. A slave node for each of a plurality of components of the medical imaging system are taught e.g., as nodes 24 and 30. In particular, in view of figure 1, nodes 24 and 30 represent a plurality of components in an I-IF shielded room thus meeting a reasonable but broad interpretation of the recited claim language. Note that other nodes are further connected on the bus as shown e.g., in figure 1. The uniform communications protocol between the master and each of the slave nodes is the CAN protocol, see e.g., column 3, lines 41- 67.

Heiserholt is further silent or deficient to a safety loopback communications link being independent from the dual-connector linkage and communicating signals separately from signals communicated via the dual conductor linkage.

Art Unit: 2616

Opoczynski teaches the above limitation as shown in figure 1 with respect to kill lines 16, request lines 18 and A/B select line 22. In particular, all three lines are dedicated and separate from the bus. Opoczynski further includes a common serial bus as Data bus A and B (i.e., a dual conductor linkage).

The examiner proposes to modify Heiserholt by further clarifying that it is well known in the art prior to applicant's invention to further include a separate safety loopback communications link.

Thus the examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, one skilled in the art would be motivated to include a separate safety loopback communications link for the purpose of transporting important control signals. As such, Opoczynski teaches the above motivation at e.g., column 2 of the reference.

As to claim 2, see e.g., column 3, lines 41- 67 with respect to the CAN protocol.

As to claim 3, see e.g., figure 3 where the CAN bus 44 has both an "H" and "L" portion.

As to claim 10, the master node is the apparatus control computer thus comprising control circuitry.

As to claim 21, see similar rejection to claim 1.

As to claim 22, see similar rejection to claim 2.

As to claim 23, see similar rejection to claim 3.

As to claim 36, see similar rejection to claim 1.

As to claim 37, the apparatus control computer 42 is used to manage the medical imaging system which includes operating the system.

Art Unit: 2616

As to claim 38, see similar rejection to claim 9.

As to claim 39, the medical imaging system is efficiently managed since the CAN protocol is used.

As to claim 40, since the CAN protocol is used there is communications compatibility between devices.

As to claim 41, see similar rejection to claim 2.

As to claim 43, see similar rejection to claim 3.

As to claim 53, see similar rejection to claim 1.

As to claim 85, Heiserholt discloses the limitation that the master node comprises a uniform communications module, a routine operational guarding module, a code error guarding module, a message integrity guarding module, an emergency notification module, a control/command management module, or a combination thereof in that the master node (42) is the apparatus control computer and is thus a control management module.

As to claim 86, Heiserholt discloses the limitation that at least one of the slave nodes comprises a uniform communications module, a routine operational guarding module, a code error guarding module, a message integrity guarding module, an emergency notification module, a control/command management module, an asynchronous process data module, a synchronous process data module, or a combination thereof in that, for example, the slave node 40 (pulse sequence control unit) comprises a control management module to manage the control of pulse sequences.

As to claim 87, see similar rejection to claim 85.

As to claim 88, see similar rejection to claim 86.

4. Claims **11, 12, 14, 15, 31, and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent No. 5,784,547 A to *Dittmar et al.* ("*Dittmar*").

As such to claim **11-12 and 14**, Heiserholt discloses the CAN protocol but may not specifically disclose fault sensing system to identify component faults at the slave nodes wherein the fault-sensing system has a critical-response time, and comprises a safe mode backup system.

Dittmar teaches the further recited limitation above at column 4, lines 16-30. In particular, Dittmar teaches switching over to second bus if a first bus fails thus teaching a reasonable but broad interpretation of identifying component faults at slave nodes. In particular, different types of faults are detected such as a cyclical function monitoring thus teaching a message-response system having a critical response time. Specifically, a message report is sent to all nodes once an error is detected. The safe mode backup system is the other bus.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying fault detection for a CAN protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to perform fault detection and

Art Unit: 2616

correction. In particular, Dittmar cures the above-cited deficiency by providing the above motivation found at the abstract.

As such to claim 15, Heiserholt discloses the CAN protocol but may not specifically disclose a component control system having a timed-component-response system.

Dittmar teaches the further recited limitation in the background. In particular, Dittmar teaches waiting for an acknowledgment within a maximum time period (time out) thus teaching a reasonable but broad interpretation of a timed-component-response system.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying fault detection for a CAN protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be perform fault detection and correction. In particular, Dittmar cures the above-cited deficiency by providing the above motivation found in the background.

As to claim 31, see similar rejection to claim 15.

As to claim 51, see e.g., step 3 at e.g., column 2, lines 55-65 which teaches a maximum response time.

5. Claims 11-14, 28, 29, 44, 46, 47, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, 287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view

Art Unit: 2616

of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent No. 5,404,465 A to *Novakovich et al.* ("*Novakovich*").

As such to claim 11-14, Heiserholt discloses the CAN protocol but may not specifically disclose fault sensing system to identify component faults at the slave nodes wherein the fault-sensing system has a critical-response time, periodically monitoring the message and comprises a safe mode backup system.

Novakovich teaches the further recited limitation above at figure 1 and the Abstract. In particular, Dittmar teaches switching over to second bus if a first bus fails thus teaching a reasonable but broad interpretation of identifying component faults at slave nodes. In particular, Novakovich teaches a fault detection method where periodic Master test packets are sent to each slave and a response is then sent back from each of the slave devices where if one of the responses is not received correctly then a fault is detected, see e.g., the Abstract and figure 1.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying fault detection for a CAN protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to perform fault detection and correction. In particular, Novakovich cures the above-cited deficiency by providing the above motivation found at the abstract.

As to claim 28, see similar rejection to claim 13.

As to claim 29, see similar rejection to claim 12.

Art Unit: 2616

As to claim 44, see similar rejection to claim 11 where the event driven message is either the Master or Slave packets.

As to claim 46, see similar rejection to claim 11.

As to claim 47, see similar rejection to claim 13.

As to claim 50, see similar rejection to claim 11.

6. Claims 47, 48, 49, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent No. 6,915,444 B2 to *Vasko et al.* ("*Vasko*").

As to claim 47, Heiserholt discloses the CAN protocol but may not specifically disclose transmitting a periodic status message.

Vasko teaches the further recited limitation above at figures 11 and 17. In particular, note that a safety message is transmitted periodically between a producer 80 (i.e., a master station) and a consumer 82 (i.e., a slave station); thus teaching the above claim limitation. See also, column 14, lines 61-63.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by including a safety protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to perform fault detection and correction. In particular, Vasko cures the above-cited deficiency by providing the above

Art Unit: 2616

motivation found at column 2, lines 31-39. Examiner also notes a reasonable expectation of success since a CAN protocol is supported by both references, see e.g., column 4, line 45 of Vasko.

As to claim 48, in addition to the reasoning for claim 47, the periodic status message is the safety message, see e.g., figure 11. As such, a periodic timer 86 is set thus further teaching a timed-response request.

As to claim 49, if an error is detected such that the consumer (i.e., slave node) does not response to the timed-response request message as requested, then the consumer transitions into a safe state, see e.g., box 134 in figure 18 and column 15, lines 1-11.

As to claim 51, the command is the safety message and the acknowledgment is the command verification, see e.g., figure 11.

As to claim 52, the maximum response time is the periodic timer 86, see e.g., figure 11.

7. Claims 5, 25, and 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, 287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of An introduction to CANopen to *Farsi et al.* ("*Farsi*").

As such to claim 5, Heiserholt discloses the CAN protocol but does not specifically teach CAN Open, see e.g., column 3, lines 41- 67.

Heiserholt is silent or deficient to the further limitation of the CAN Open protocol.

Farsi teaches the further recited limitation above at e.g., left-hand column on page 161.

Art Unit: 2616

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying that the CAN protocol is the CAN Open protocol.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to make it possible for devices of different types and markings to be integrated together and to communicate with each other. In particular, Farsi cures the above-cited deficiency by providing a motivation found at e.g., left-hand column on page 161, second full paragraph.

As to claim 25, see similar rejection to claim 5.

As to claim 42, see similar rejection to claim 5.

8. Claims 16-19, 26-27, 30, 32-34, 44, 45, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent No. 6,907,485 B2 A to *White, III et al.* ("*White*").

As such to claim 16, Heiserholt discloses the CAN protocol but may not specifically teach at least one of the slave nodes comprising an emergency status messaging module.

White teaches the further recited limitation above at the abstract with respect to the slave nodes sending a state change signal.

Art Unit: 2616

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying an emergency status messaging module.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to monitor the state of a device. In particular, White cures the above-cited deficiency by providing the above motivation found at the abstract.

As such to claims **17-18**, Heiserholt discloses the CAN protocol but may not specifically teach an asynchronous and synchronous module.

White teaches the further recited limitation above at the abstract with respect to sending a state change signal.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying an asynchronous and synchronous module.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to monitor the state of a device. In particular, White cures the above-cited deficiency by providing the above motivation found at the abstract.

Art Unit: 2616

As such to claims 19, Heiserholt discloses the CAN protocol but may not specifically teach wherein at least one of the slave nodes comprises a fault sensing system to identify component faults at the slave node.

White teaches the further recited limitation above at the abstract with respect to collecting state signals from the I/O modules (i.e., slave modules) to respond to a change (i.e., failure) at the I/O module, see e.g., the Abstract.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying a fault sensing system to identify component faults at the slave node.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to monitor the state of an I/O or slave device. In particular, White cures the above-cited deficiency by providing the above motivation found at the abstract.

As to claim 26, see similar rejection to claim 16.

As to claim 27, see similar rejection to claim 16.

As to claim 30, see similar rejection to claim 19.

As to claim 32, see similar rejection to claim 16.

As to claim 33, see similar rejection to claim 17.

As to claim 34, see similar rejection to claim 18.

As to claim 44, see similar rejection to claim 26.

As to claim 45, see similar rejection to claim 27.

Art Unit: 2616

As to claim **50**, see similar rejection to claim 19.

9. Claims **20 and 35** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of Bosch Controller Area Network Version 2.0 Protocol Standard to Motorola.

As such to claim **20**, Heiserholt discloses the CAN protocol but does not specifically teach using a CRC to ensure data integrity on the network.

Heiserholt is silent or deficient to using a CRC to ensure data integrity.

Motorola teaches the further recited limitation above at e.g., section 9.8.1 on page 9-4.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying that the CAN protocol uses CRC for error detection.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be perform error detection. In particular, Motorola cures the above-cited deficiency by providing a motivation found at e.g., section 9.8.1 on page 9-4.

As to claim **35**, see similar rejection to claim 20.

10. Claims **56-60 and 62** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No.

Art Unit: 2616

5,453,737 A to *Opoczynski* and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*").

As such to claim 56, see e.g., figure 2 of Heiserholt where a master node is taught as CAN master 42. A slave node for each of a plurality of components of the medical the medical imaging system are taught e.g., as nodes 24 and 30. In particular, in view of figure 1, nodes 24 and 30 represent a plurality of components in a HF shielded room. Note that other nodes are further connected on the bus as shown e.g., in figure 1. The uniform commutations protocol between the master and each of the slave nodes is the CAN protocol, see e.g., column 3, lines 41-67.

Heiserholt is silent or deficient to generating the medical diagnostic image.

Funahashi teaches the further recited limitation above at e.g., paragraph 0072 on page 5.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying that one of the devices e.g., in figure 1 generates an image such that the imaging computer 46 and further disclosed at column 4, lines 1-30 can be used to display a medical diagnostic image.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to display an image of the MRI.

As to claim 57, Heiserholt discloses a medical image system and components of a medical image system including image acquisition, image processing, user interaction, and monitoring components, see e.g., column 2, lines 52 to column 3, line 30.

Art Unit: 2616

As to claim **58**, the medical imaging system is efficiently managed since the CAN protocol is used as taught by Heiserholt at e.g., column 3, lines 40-67.

As to claim **59**, communications capability is taught since the CAN protocol is used as taught by Heiserholt at e.g., column 3, lines 40-67.

As to claim **60**, communications capability is taught since the CAN protocol is used as taught by Heiserholt at e.g., column 3, lines 40-67.

As to claim **62**, see e.g., figure 3 of Heiserholt where the CAN bus 44 has both an "H" and "L" portion.

11. Claim **61** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to Opoczynski and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view of An introduction to CANopen to *Farsi et al.* ("*Farsi*").

As such to claim **61**, Heiserholt discloses the CAN protocol but does not specifically teach CAN Open, see e.g., column 3, lines 41- 67.

Heiserholt and Funahashi are silent or deficient to the further limitation of the CAN Open protocol.

Farsi teaches the further recited limitation above at e.g., left-hand column on page 161.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify Heiserholt by clarifying that the CAN protocol is the CAN Open protocol.

Art Unit: 2616

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to make it possible for devices of different types and markings to be integrated together and to communicate with each other. In particular, Farsi cures the above-cited deficiency by providing a motivation found at e.g., left-hand column on page 161, second full paragraph.

12. Claims **63 and 64** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, 287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view of U.S. Patent No. 6,907,485 B2 A to *White, III et al.* ("*White*").

As to claim **63**, see similar rejection to claim 16, 26 or 44.

As to claim **64**, see similar rejection to claim 27 or 45.

13. Claims **66 and 69** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287, 287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view U.S. Patent No. 5,404,465 A to *Novakovich et al.* ("*Novakovich*").

As to claim **66**, see similar rejection to claim 47.

As to claim **69**, see similar rejection to claim 50.

Art Unit: 2616

14. Claim **65** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and U.S. Patent No. 6,907,485 B2 A to *White, III et al.* ("*White*") and in further view U.S. Patent No. 5,404,465 A to *Novakovich et al.* ("*Novakovich*").

As to claim **65**, see similar rejection to claim 46.

15. Claims **66, 67, 68, 70, and 71** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to *Opoczynski* and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view U.S. Patent No. 6,915,444 B2 to *Vasko et al.* ("*Vasko*").

As to claim **66**, see similar rejection to claim 47.

As to claim **67**, see similar rejection to claim 48.

As to claim **68**, see similar rejection to claim 49.

As to claim **70**, see similar rejection to claim 51.

As to claim **71**, see similar rejection to claim 52.

16. Claim **70** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,198,287,287 B1 to *Heiserholt et al.* ("*Heiserholt*") in view of U.S. Patent No. 5,453,737 A to

Opoczynski and in further view of U.S. Patent Application 2002/0081039 to *Funahashi et al.* ("*Funahashi*") and in further view U.S. Patent No. 5,784,547 A to *Dittmar et al.* ("*Dittmar*").

As to claim 70, see similar rejection to claim 51.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 7:00-5:30 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCS 4-26-07
Robert C. Scheibel
Patent Examiner
Art Unit 2616

Seema S. Rao
4/26/07

SEEMA S. RAO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600